

## What Type of Engine Is Coming?

Every automobile owner would like to know the progress that is being made in the automobile engine construction and what the future holds for the different types both in this country and in Europe. The writer has made a complete analysis of the engine situation and finds that the overhead valve is fast becoming the American standard, and though the six cylinder is the leader, with the four second, the eight third and the twelve last, there will be in a few years a sudden turn to multi-cylinders. European critics seem to believe that also abroad will the multi-cylinder engine gradually creep into first position. It may be difficult for many to see how the six cylinder can be displaced, but the same view was held of the four not so many years ago. The ideas that the eight and the twelve present mechanical complications and that the more cylinders the more trouble have been shattered. There are two outstanding features of the multi-cylinder engine which will make its appeal all the stronger. One is its performance and the other its quietness. Smoothness of torque—great pulling ability on hills when the car is running slowly, quick pickup, reduction of vibration, are the results of multi-cylinder construction. Speed and power, while they may be had in the four or six, cannot be had with the same smoothness of operation as in the eight or twelve.

It was believed that the use of eight or twelve cylinders entailed the use of a long or wide hood because the engine took up more room than a four or six. As a matter of fact we now have eight, with cylinders in a row, that are shorter than any six producing the same power and speed. In Europe the Lancia company is building a twelve cylinder which is larger than a six and looks exactly like one, owing to the casting of all cylinders in one block. The two rows of cylinders are only 22 degrees apart and only one carburetor is used. At the same time all in a row idea will take hold and we shall see many such models in production.

In Europe the average car has four cylinders and a four-speed transmission, while at present the American average is a six with a three speed transmission. Europeans do not object in the least to shifting gears and they are not so insistent upon obtaining the high gear performance demanded by American buyers, hence the four cylinder engine with the four speed transmission.

Gradually though the Europeans are coming to American ideas, for the Paris and London shows, recently held, indicate the following ideas that are being taken up practically by all European builders: Vacuum fuel feed, block casting of cylinders, removable cylinder heads, battery ignition, electric starting and lighting.

During the war American builders had a wonderful opportunity to work out details of design for the post-war engines using some of the knowledge gained in the design of airplane engines. These builders have not worked out their designs as quickly as the foreign designers who already have more than a dozen overhead valve engines with overhead camshafts. We shall see these designs on our cars a year or two hence.

It has been thought by the average automobile owner that a valve in head engine is necessarily more powerful than an L head or T head. The valve location is not the determining factor in power output, so it is possible to have an L head of given size even more powerful and speedier than an overhead valve engine. However, the overhead valve engine on the average is a more efficient type. The one objection to it, namely noise, has been almost entirely eliminated by improvements in design detail of the valve gear.

The automobile owner or buyer should consider that just because a car has an overhead valve engine it doesn't make that car faster or better than one with another type of engine. As a matter of fact the engine may have many times the power and speed of another, and the car in which it is mounted give poor performance. The work the engine has to do must be considered. An engine of a big truck may produce 75 horse-power, yet the truck can only travel a maximum of twenty-five or thirty miles per hour. Some of the best cars made in this country and abroad have L head engines, as for example the Rolls-Royce of England, the Packard, Cadillac, etc.

It is a fact that engine vibration and engine noise on public roads have a bearing on the life of the rest

of the car. Take a two-cylinder engine as an example. The heavy explosions coming infrequently jolt every part of the driving mechanism. Instead of a "thunderous" blow infrequently the four gives twice the number of explosions, but of minor magnitude. The six gives three times the number, each separate explosion being slight. The eight gives four times the number and the twelve six times as many as a two cylinder engine. The more the number of cylinders the greater the number of smaller explosions in the same time, hence the less the individual shocks to the whole power transmitting mechanism. This is why a four-cylinder car you can almost feel distinct vibrations every time the engine fires, and what you can feel the car parts also feel.

### PERU'S FIRST AMBASSADOR HERE

(New York Tribune)

Peru has been added to the list of Latin-American states maintaining embassies in Washington. The first ambassador, Frederico A. Pezet, has arrived in this country, and the state department seems inclined to annul for his benefit its famous Costa Rican "house rule," to the effect that no diplomatic recognition can be given to a Latin-American government coming into power through revolution. President Leguia assumed control in Lima by force last year and exiled his predecessor, doing so on the ground that he had been elected president by the people for a term to begin a few months later and that the administration in office was planning to count him out.

Mr. Pezet will be welcome as the representative of Peru, a state which has always had the most friendly relations with the United States. He served here formerly both as first secretary of legation and as minister. He knows this country thoroughly, speaks English as well as he does Spanish, and enjoys in an exceptional degree the esteem of government and other circles in Washington, in which he has long been at home.

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## NEW GREEN SEAL BATTERY WARMLY WELCOMED HERE

Automobile drivers throughout Southern California are welcoming the new "Green Seal" Prest-O-Lite battery as the most economical yet placed on the market. The fact that the battery is virtually made the same day that you put it in your car, has attracted the attention of hundreds of motorists all over the southland who at first wonder how such a thing is possible in battery construction, considering that Southern California is some two thousand miles removed from the Prest-O-Lite factory at Indianapolis.

"It is just this way," remarked J. H. Cummings, local distributor for the Prest-O-Lite Green Seal battery. "The secret of success of the Prest-O-Lite Green Seal lies in a perfected process of manufacture which permits the shipping of the battery without being filled or charged at the factory. It is a well known fact among motorists that deterioration of the component parts of a battery is caused by the action of acid upon the electrodes or plates of the interior. The Prest-O-Lite Green Seal battery is made dry at the factory and shipped assembled ready to receive the acid and charge for the first time at our service station the day it goes into your car."

That means that you get a fresh battery, newly charged the day that it is connected up. Compare this with the old style storage battery that is fully made and charged the day that it leaves the factory. Perhaps it is one month in transit out here and lays on the dealers shelf from three to nine months before it is purchased. During all this time the action of the acid upon the plates of the battery has had a deteriorated effect. The battery is from six to nine months "worn out" the day that it goes into your car.

Not only in Southern California but throughout the United States, the "Green Seal" Prest-O-Lite battery has virtually stampeded the battery market, according to reports that are coming to local dealers from various cor-

ners of the country. The experience of dealers in this community has been repeated time and again throughout the nation in as much as there has been no advance in price of the Prest-O-Lite due to the Green Seal feature, and likewise due to the fact that Prest-O-Lite is known as the oldest service to motor car drivers in the United States.

### "REMOVE CAUSES," SAYS MRS. KELLY Industrial Unrest Will Disappear

By Frederick M. Kerby

NEW YORK.—The only remedy for industrial unrest is to remove its causes. "Statutes" instead of "strikes" to secure industrial justice is the remedy.

This is the opinion of Mrs. Kelly, president of the National Consumers' league, which has for years been working for the production of goods under proper working conditions for girls and women.

"Statutes instead of strikes as means of allying industrial unrest and of raising the level of women's wages has been adopted by the league among its main planks in a ten-years' program which we adopted," said Mrs. Kelly.

"The best sort of anti-strike legislation, we maintain, is that which removes the underlying causes of industrial disorder. Fourteen states and the District of Columbia are busy cutting the ground from under this

industrial unrest, so far as women's wages are concerned, by means of minimum wage commissions which attempt to adjust rates of pay to living costs.

The resolution adopted at the annual meeting of the Consumers' league is as follows: "Whereas, we recognize among the permanent causes of industrial unrest, wages insufficient to meet the cost of living, therefore, be it resolved, that we continue our efforts for the establishment of minimum wage commissions in all the states of the union."

"The experience of states having minimum wage commissions," said Mrs. Kelly, "shows that neither has the minimum wage become maximum, nor has any industry been driven from any state because of such legislation."

"Minimum wage legislation is almost universal in English-speaking countries outside the United States, Australia, Tasmania, New Zealand, Great Britain, British Columbia, Manitoba, Saskatchewan and Quebec all have it," said Mrs. Kelly.

The states where it is in force are Arizona, Arkansas, California, Colorado, Kansas, Massachusetts, Minnesota, Nebraska, North Dakota, Oregon, Texas, Utah, Washington, Wisconsin and the District of Columbia.

### "HAIRPIN KING" IS STUNG

(Chicago Herald and Examiner)

The prospect of a confidence man selling an "air bag" to a mental Co-

llossus who put the hump in the hairpin, invented a submarine destroyer and evolved a process for retwining auto tires that made millions, smacks of humorous fiction.

All the humor is deleted from the tale told a grand jury the other day by Sol Goldberg, the genius in question. He paid \$100,000 for the "air bag" patent.

Indictments were returned against Clyde Smith of South Bend, Ind., and Harold Lane of New York. Conspiracy to obtain money under false pretense is the charge.

Smith deserted his tire shop in South Bend when Lane "let him in on" his scheme. Smith paid a Mr. Danford \$7,500 to meet the millionaire inventor.

Mr. Smith met Mr. Goldberg and glibly unfolded the tale of his "invention." His "air bag" would cast and cool two hundred tires, where only six had been cooled before. Sol cast a cold eye on the "inventor" and went to New York. There he met the astute Mr. Lane, who posed as an agent for a widely known tire company.

"Understand you've got the rights to the new air bag invention," said Mr. Lane. "Now, my people would like to see it."

Mr. Goldberg hastened to South Bend and sought out the young "inventor."

"I gave him \$30,000 cash, \$100,000 in Liberty bonds and ten personal notes for \$25,000 apiece," related the hairpin king. "All he had was a repair shop."

Goldberg, who is president of the

Hump Hairpin company, and lives at the Cooper-Carlton hotel, made \$25 million dollars recently when he sold his new tire renewing process.

When the company's stock was put on the market, it eclipsed all previous records for aviation.

In 1917 Mr. Goldberg was called to Washington with his "submarine destroyer." He floated a model in his bathtub, merely pushed a button and, poof! the enemy was apurpos versenkt.

Besides these trifles, Mr. Goldberg presents femininity with 18 million hump hairpins a day.

EXPLAINED (London Opinion.)

The Judge—"You were found under a bed with a bag of tools. Any excuse?"

The Prisoner—"Force of habit, yer washup! I've been a motorist."

The Russian bears seems no nearer the end of their fight, but a dozen powers snapping at their heels will not help matters.

There may be magic in numbers. Let's offer Carraza 14 per cent of the output of American-owned wells.

Our guess is that Europe's love for America is declining at an even pace with our foreign exchange rate.

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## The Hudson Super-Six Motor Almost Doubles Efficiency

It Adds 72% to Power, Without More Weight and Increases Efficiency by 80%. It is Exclusive to Hudson

The Hudson Super-Six has proved master of all stock cars in speed, power, endurance.

Will you accept a lesser car?

Disregard mere claims. What are the facts?

The Hudson made the fastest stock car mile at the rate of 102 miles per hour. One car in various official tests ran 3800 miles, averaging 80 miles an hour. It won the Pike's Peak contest, the world's classic hill climb. In a continuous journey it crossed and recrossed the continent, a distance of 7,000 miles in 10 days, 21 hours, a feat never performed by another car.

By sheer endurance it time after time defeated the world's fastest racing cars, in championship speedway races. It holds all the important acceleration records.

### Belongs Exclusively to Hudson

We could expect no less than complete performance supremacy for the Hudson Super-Six. Its type gives it every advantage. The Super-Six motor, through its exclusive patented principle, delivers 76 horsepower from the same size motor that in standard types delivers 42 horsepower at the utmost limit.

Thus it is the most powerful for its size in the world. It is the swiftest, the most enduring, quickest in acceleration, the most dependable hill-climber.

Its proofs are in official tests where all may verify them. If any disputes Hudson supremacy, it is not in official tests.

True you do not need such great speed as Hudson's. You may never meet an obstacle to test its power limits.

But they mean in ordinary driving you run the Super-Six at half load. In performance at which lesser cars strain, with permanent bad results to the mechanism, the Hudson is easily within its reserve of speed and power.

### For Five Years It Has Led Them All

It is one of the reasons that 80,000 owners know the Hudson above all as an endurance car.

Because of what it has shown, not only in official tests, but in the service of all these owners, the Hudson Super-Six has for nearly five years been the largest selling fine car in the world.

The supply has never been sufficient for the demand. That often means waiting for certain wanted models. You will avoid disappointment, by placing your Hudson order, well ahead of the desired delivery date.

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## State Highway News

Rains which have continued intermitantly over the state have caused practically every river crossing to remain in a somewhat problematical condition.

'According to the latest reports received at the state engineer's office the Agua Fria crossing on Black Canyon road is very difficult. The Gila river is running high at Sacaton, there are several holes there from three to five feet deep making it dangerous to cross.

The Gila River at Ray Junction also presents considerable of a problem to the motorist.

As a rule the rains according to reports brought in have left the roads in somewhat better condition than they were previously. There is no trouble in getting from here to Tucson. Motorists coming through report a rather pleasant journey.

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